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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,094	09/19/2000	Masayuki Mizuno	Q60884	5281

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EXAMINER

MONDT, JOHANNES P

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/664,094

Applicant(s)

MIZUNO, MASAYUKI

Examiner

Johannes P. Mondt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2, 5, 9-11 and 13-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,5,9-11 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Amendment filed 10/26/2005 forms the basis for this office action. In said Amendment Applicant added new claims 16 and 17 and cancelled claim 1. Claims 3, 4, 6-8 and 12 have previously been cancelled. Applicant also submitted a certified translation of the Foreign Priority Document. Said certified translation overcomes the rejection of claim 11 under 35 USC 103(a) made in the office action mailed 7/27/2005.

Comments on Remarks submitted with said Amendment are included below under "Response to Arguments".

Claim Objections

1. **Claim 13** is objected to because of the following informalities: the wording "is" (line 3) should be replaced by "are". Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. **Claim 2** is rejected under 35 U.S.C. 102(e) as being anticipated by Tulintseff (6,023,210).

Tulintseff teaches (title, abstract, Figure 1a) a signal line 124/122 (col. 4, lines 26-30); a ground plate 130 (col. 4, lines 9-10); and another signal line 144/142 (col. 4, lines 26-30) disposed on an opposite side of the ground plate as said signal line 124/122 (see Figure 1a); wherein at least one through hole 132b (col. 4, line 57 – col. 5, line 18) is formed in said ground plate 130, and an inner wall of said through hole is only directly electrically connected to said ground plate (said through hole being an aperture not filled with conductive material),

wherein an aperture size of said through hole is smaller than a width of said signal line (because $W_s < W_p$ (see col. 5, lines 10-17) while W_p is in a range that already substantially overlaps with the range as claimed, being 'approximately' the same as that of 124 (col. 4, lines 63-66)).

2. *Claims 2 and 11* are rejected under 35 U.S.C. 102(e) as being anticipated by Hirabe (6,084,548).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

On claim 2: Hirabe teaches (title, abstract, Figure 7; Third Embodiment, col. 6, line 48 – col. 7, line 22) a signal line comprising 404 (col. 6, lines 48-65); a ground plate 408 (col. 6, l. 53); and another signal line 406 (col. 6, l. 66 – col. 7, l. 3) disposed on an opposite side of the ground plate as said signal line (col. 4, lines 12-22); wherein at least one through hole 405 (col. 7, lines 3-10) is formed in said ground plate, and an

inner wall of said through hole is only directly electrically connected to said ground plate (being merely an opening and hence not filled with conductive material), wherein an aperture size of said through hole is smaller than a width of said signal line 404 (col. 7, lines 7-10).

On claim 11: Hirabe teaches (title, abstract, Figure 7; Third Embodiment, col. 6, line 48 – col. 7, line 22) a signal line comprising 404 (col. 6, lines 48-65); a ground plate 408 (col. 6, l. 53); and another signal line 406 (col. 6, l. 66 – col. 7, l. 3) disposed on an opposite side of the ground plate as said signal line (col. 4, lines 12-22);

wherein a plurality of through holes 405 (col. 7, lines 3-10) are formed in said ground plate, and an inner wall of said through hole is only directly electrically connected to said ground plate (being merely openings and hence not filled with conductive material),

wherein said plurality of through holes 405 are formed along a longitudinal direction of a signal transmission line 411 and arranged at equal spaces or in a same pattern, namely: in a same pattern, as witnessed by Figure 7), and

wherein an aperture size of each of said through holes is smaller than a width of said signal line 404 (col. 7, lines 7-10).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 5 and 16** are rejected under 35 U.S.C. 102(b) as being anticipated by Schloemann (4,521,753).

On claim 5: Schloemann teaches (Figure 11, title, abstract; see also Figures 18-19) a signal line 114 (col. 9, l. 61-62); a ground plate 118 (col. 9, l. 61), and another

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signal line 124 (col. 11, l. 25-38) disposed on an opposite side of said ground plate as said signal line;

wherein at least one through hole (hole in a central section of said signal line 114, said central section having edges 114c' and 114c'' (Figure 11) (col. 9, l. 55 – col. 10, l. 2) is formed in said signal line, and an inner wall of said through hole is only directly electrically connected to said signal line (because said through hole is a spacing between said edges 114c' and 114c''), and

wherein an aperture size of said through hole formed in said signal line is smaller than a width of said signal line (because said through hole is a through hole in said signal line that does not disconnect portions of said signal line); and

wherein at least one through hole 118' (col. 10, l. 47-60) is formed in said ground plate, and an inner wall of said through hole is only directly electrically connected to said ground plate (because said through hole is a void).

On claim 16: Schloemann teaches (Figures 18-19, title, abstract and columns 17-19) a signal line 114 (col. 9, l. 62-62); a ground plate 188 (col. 17, line 59), and another signal line 184 (col. 17, line 41) disposed on an opposite side of said ground plate as said signal line (see Figures 18-19); wherein at least two through holes (holes in a central section of said signal line 184, said central section having edges 184b', 184'b'' for one through hole and 184d', 184d'' for another through hole (see Figures 18-19) (col. 17, lines 42-51) are formed in said signal line, and an inner wall of each of said through holes is only directly electrically connected to said signal line (said through holes being not filled with a conductor), and

wherein an aperture size of each of said at least two through holes is smaller than a width of said signal line (because each of said through holes is a through hole in said signal line leaving signal line material 184b' 184b'' and 184d', 184d'', respectively, left over to surround said through hole: see Figures 18 and 19.

4. **Claims 9-10, 14-15 and 17** are rejected under 35 U.S.C. 102(b) as being anticipated by Yasuoka (4,399,341).

On claim 9: Yasuoka teaches (title, abstract, Figures 2-3; columns 4-5) a signal line 12 (comprising ladder portion 13; see col. 4, lines 15-29); a ground plate 15 (col. 4, lines 29-33); another signal line 20 (col. 4, l. 33-47) disposed on an opposite side of said ground plate as said signal line;

wherein a plurality of slit holes 14 (in 13; col. 4, lines 26-29) are formed in said signal line, and an inner wall of said plurality of slit holes is only directly electrically connected to said signal line (because said slits are leakage openings not filled with conductive material), wherein a width of each of said slit holes is smaller than a width of the signal line.(col. 4, lines 15-29 and Figure 2).

On claim 10: Yasuoka teaches (title, abstract, Figures 2-3; columns 4-5) a signal line 12 (comprising ladder portion 13; see col. 4, lines 15-29); a ground plate 15 (col. 4, lines 29-33); another signal line 20 (col. 4, l. 33-47) disposed on an opposite side of said ground plate as said signal line;

wherein a plurality of through holes 14 (in 13; col. 4, lines 26-29) are formed in said signal line, and an inner wall of said plurality of through holes is only directly

electrically connected to said signal line (because said slits are leakage openings not filled with conductive material), and

wherein said plurality of through holes 14 are formed along a longitudinal direction of a signal transmission line (signal line 12 comprising 13) and arranged at equal spaces or in a same pattern, namely in a same, i.e., repetitive, pattern, as evident from Figure 2, as well as from the characterization "ladder" (col. 4, line 24) for the portion 13 of signal line 12.

On claim 14: an aperture size of each of said plurality of through holes 14 in Yasuoka is smaller than a width of said signal line because 14 is entirely interior to signal line 12 comprising 13 (see Figure 2 and the characterization "ladder" (col. 4, line 24) .

On claim 15: a width of each of the slit holes 14 in Yasuoka is smaller than a width of each of the respective plurality of thin strips because 14 is entirely interior to signal line 12 comprising 13 (see Figure 2 and the characterization "ladder" (col. 4, line 24).

On claim 17: Yasuoka teaches (title, abstract, Figures 2-3; columns 4-5) a signal line 12 (comprising ladder portion 13; see col. 4, lines 15-29); a ground plate 15 (col. 4, lines 29-33); another signal line 20 (col. 4, l. 33-47) disposed on an opposite side of said ground plate as said signal line;

wherein at least one through hole 14 (in 13; col. 4, lines 26-29) is formed in said signal line, and an inner wall of said through hole is only directly electrically connected

to said signal line (because said through hole is a leakage opening not filled with conductive material),

wherein an aperture size of said through hole is smaller than a width of said signal line because 14 is entirely interior to signal line 12 comprising 13 (see Figure 2 and the characterization "ladder" (col. 4, line 24), and

wherein a width of said signal line where said through is formed is the same as a width of said signal line where said through hole is not formed (col. 6, lines 11-13: the long edge of 13 is straight and 13 is characterized by "a width").

Response to Arguments

Applicant's arguments filed 10/26/05 have been fully considered but they are not fully persuasive. In particular:

With regard to the traverse of the rejection of claims 2 and 5, although based on the Remarks and the disclosure by Schloemann the argument in traverse of the rejection of claim 2 can be accepted based on the failure to disclose "the aperture size of the through hole in said ground plate is smaller than a width of the signal line", the argument by Applicant that Schloemann fails to disclose "an inner wall of said through hole is only directly electrically connected to said ground plate" is incorrect, because through hole 118' is only directly electrically connected to ground plate 118, the alleged "direct" electrical connection to the inner wall of void 128' of ground plate conductor 128 being indirect, namely through an interface between 118 and 128. Although the rejection of claim 2 based on Schloemann is herewith withdrawn, other prior art has been found in the form of Tulintseff and Hirabe (see rejections overleaf); however, the

rejection of claim 5 based on Schloemann is still correct, the traverse of the rejection of claim 5 being based only on the second argument concerning the inner wall.

With regard to claim 13, the traverse by Applicant of the rejection over Schloemann is accepted based on the same considerations as for claim 2, namely the failure by Schloemann to disclose an aperture size of said through hole formed in said ground plate that is smaller than a width of said signal line. Neither Tulinstev nor Hirabe disclose through holes in a signal line, in addition to the through holes in the ground plate, and hence claim 13 is noted to contain allowable subject matter, subject only to an objection for minor informalities (see above under "Claim Objections").

Furthermore, an update search has revealed prior art for all other pending claims except for claim 13, and, with regrets, the indication of allowability of claims 9, 10, 14 and 15 must herewith be withdrawn in light of Yasuoka (4,399,341).

Allowable Subject Matter

5. ***Claim 13*** objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if corrected for minor informalities so as to overcome the objection made under "Claim Objections" overleaf.

The following is a statement of reasons for the indication of allowable subject matter: closest art is Schloemann as cited, disclosing through holes in both signal line and ground plate. However, the through holes through the ground plate do not have any

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size smaller than the width of said signal line, nor would it be obvious to include a teaching thereof in Schloemann.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P. Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
December 29, 2005

Patent Examiner:



Johannes Mondt (Art Unit: 3663).